REMARKS

All of the claims remain rejected as obvious over Kashiwase *et al.* and Sehested *et al.* with or without other references. The claims recite a method of removing organic contaminants from a substrate comprising the use of a fluid comprising water, ozone, and an additive acting as a scavenger. On page 4, the final Office Action admits that the Kashiwase *et al.* fails to disclose the introduction of an additive such as acetic acid to an aqueous ozone solution. Thus, the issue is whether the Sehested *et al.* bridges the gap between (a) Kashiwase *et al.*'s teaching of a method comprising water and ozone and (b) the presently claimed method comprising water, ozone, and an additive that acts as a scavenger. (Various claims contain additional limitations that taken together also must be rendered obvious by the cited art for the rejections to be sustained.)

While Sehested *et al.* teaches acetic acid stabilizes aqueous ozone, neither it nor Kashiwase *et al.* nor any of the other cited art make any connection between ozone stabilization and the ability of aqueous ozone to clean organic contaminants from a substrate. That is, none of the cited art suggest that stabilization of ozone would lead to increased cleaning efficiency as observed by the present inventors. Indeed, none of the cited art teaches or suggests that ozone decomposition plays any significant role in diminishing the cleaning efficiency of aqueous ozone. Without a recognition that ozone decomposition diminishes the cleaning efficiency of aqueous ozone, there can be no motivation to stabilize the ozone and, therefore, no motivation to combine the references as the Office Action has done.

Furthermore, whether ozone stabilization would lead to increased cleaning efficiency depends on a number of factors, including, but not limited to, the rate of cleaning, the rate of ozone decomposition, and the degree to which the ozone stabilizer decreases the rate of ozone decomposition and the relation of the decreased rate to the rate of cleaning. For instance, if the rate of cleaning were much faster than the rate of ozone decomposition (*i.e.*, cleaning was essentially completed before significant amounts of ozone have decomposed), stabilization of the ozone would be expected to have essentially no affect on the cleaning efficiency. Without a teaching of these factors, one of ordinary skill in the art could not have a reasonable expectation that adding an

additive that acts as a scavenger to an aqueous ozone solution would lead to an increased cleaning efficiency, as observed by the inventors for the presently claimed methods.

Because the cited art provides neither the motivation to combine the references as has been done or to provide sufficient teachings to imbue the ordinary artisan with a reasonable expectation of success, the presently pending claims cannot be obvious over the cited art.

In their last response, the applicants argued that the present claims are not obvious over the cited art because the claimed method embodies an advantage not shared, taught, or suggested by the cited art, pointing to comparative data in the present specification. The Office Action dismissed the data, alleging that it was not persuasive as it was not comparative data between the present claims and the applied prior art. The applicants respectfully disagree.

Kashiwase *et al.* teaches a two step photo resist film cleaning process comprising (1) immersing the film in a mixed solution of sulfuric acid and hydrogen peroxide followed by (for a substrate such as silicon) (2) rinsing with an aqueous ozone solution to remove remaining residue not removed by the first step. Kashiwase *et al.*, col. 4, ll. 22-36. As stated on page 4 of the final Office Action, Kashiwase *et al.* is silent regarding the addition of an additive that acts as a scavenger, and Sehested *et al.* is relied upon for its teaching of acetic acid as a stabilizer. Thus, an acknowledged difference between the cited art and the present claims is that the prior art Kashiwase *et al.* teaches a cleaning step comprising aqueous ozone without a scavenger additive whereas the claimed method comprises cleaning with aqueous ozone with a scavenger additive. And this is exactly the comparison made in the experiments disclosed on pages 16-18 of the present specification (entitled "Application 2"), to which the applicants referred in their previous response.

These experiments present a comparative study of the cleaning efficiency of aqueous ozone without the scavenger acetic acid (such as taught by Kashiwase *et al.*) and with the scavenger acetic acid (as recited in the present claims). Thus, these experiments are a direct comparison between the applied art and the present claims. And, as previously noted, the cited art simply fails provide any teachings or suggestions from which the ordinary artisan could reasonably have expected to observe an enhanced cleaning efficiency of 50% of implanted positive resist wafers, of up to 50% of un-implanted negative resist wafers, and of up to 88% of un-implanted positive resist wafers using the presently claimed method.

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In view of all of the foregoing, the applicants submit that the present claims cannot be obvious over the cited art. Consequently, they respectfully request reconsideration and withdrawal of the § 103 rejections.

If there are any questions or comments regarding this Response or application, the Examiner is encouraged to contact the undersigned attorney as indicated below.

Respectfully submitted,

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